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September 8, 1995

Our ref. 913-1101.608

RECEIVED

SEP 11 1995

SUPERFUND BRANCH

U.S. EPA Region X
1200 Sixth Avenue
Seattle, WA 98101

ATTENTION: Mr. T. Brincefield, Superfund Site Manager

RE: MONSANTO RESPONSES TO EPA COMMENTS ON THE PHASE II RI,
MONSANTO ELEMENTAL PHOSPHOROUS PLANT, SODA SPRINGS, IDAHO

Dear Mr. Brincefield:

On behalf of the Monsanto Company, we have prepared this letter detailing responses to EPA's comments on the Phase II RI. These comments were provided in your letter to Mr. Robert L. Geddes (Monsanto Co.) dated August 3, 1995. In preparing the responses, we have retained the same comment reference numbers as were used in your letter.

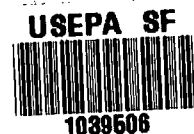
1. General Comment
Comment references EPA Comment 2

COMMENT: The proposed paragraph describing the purpose and applications of the groundwater modeling should include a brief discussion of the limitations of the model. The discussion should address the limitations of the model for predicting fate and transport of site constituents in the vicinity of the site and the uncertainties associated with the predictions.

RESPONSE: A paragraph will be added immediately above Section 3.7.3.1 stating the purpose, applications and limitations of the modeling. In particular, it will be indicated that the regional model does not include local faulting which is known to locally influence the groundwater flow direction in and adjacent to the Monsanto Plant. We will indicate that a refined model covering smaller area is necessary to represent local faulting. However, we will also note that the regional model developed at this time could be used to determine appropriate constant head boundary conditions for the refined model.

2. Page 18, Section 2.1.2, Paragraph 2
Comment references EPA Comment 9

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COMMENT: The comment response identifies sample collection locations as being the material surface. Samples collected from the material surface may or may not be representative of the material available for transport through the air pathway. A portion of the fine-grained material may have already migrated from the material surface prior to sampling. Samples collected from within the material may be more representative of the grain-size distribution of the material available for transport.

RESPONSE: Acknowledged. The sampling procedure was documented and approved by EPA prior to the sampling. Note that many of samples were collected at a time when the ground was frozen and therefore not subject to wind erosion.

3. Page 66, Section 3.7.1.2, Paragraph 3
Comment references EPA Comment 16

COMMENT: The proposed revision to the text on Page 79 does not resolve the issue raised in the comment. The comment points out that the discussion on Page 66 suggests the source for water discharged at Ledger Spring is the Blackfoot Lava Field. As with the original text, the proposed revision indicates the source of the discharged water is in the mountains east of the lava field. An interpretation consistent with both the travertine deposit and fresh water quality data (Page 66) and oxygen-18 and deuterium data (Page 79) rationale should be provided to identify the source of spring discharge water.

RESPONSE: There appears to be some confusion concerning the recharge source for the Ledger Springs. The text indicates that both Formation and Ledger Springs receive recharge from precipitation onto the mountains to the east of the Blackfoot Lava Field. The text also states that the Ledger Springs receive recharge from the Blackfoot Lava Field.

Both statements are true. Groundwater recharging the Blackfoot Lava Field, and discharging through the Ledger Springs, originates in the mountains to the east of the valley. The groundwater must simply first pass through the periphery of the Blackfoot Lava Field aquifers before it reaches the Ledger Springs and discharges to the atmosphere. We have assumed that groundwater flow occurs primarily in the more transmissive upper basalt zone, and thus, we have represented the Ledger Springs in the regional groundwater model, which focuses on the upper basalt zone.

We propose to modify the text on page 79 of the Phase II RI as follows: "...whereas recharge to Formation and Ledger Springs is considered to originate east of the Blackfoot Lava Field (although recharge to Ledger Springs must first flow through the Blackfoot Lava Field to reach the spring)."

4. Page 112, Section 4.6.1, Paragraph 3
Comment references EPA Comment 29

COMMENT: Comment response does not satisfy the EPA comments. The comment references the second sentence in the paragraph, which concludes that the aquifers are separated into flow regions with little to no hydraulic continuity. As indicated in the response to EPA Comment 20, insufficient data exist to form such a definite conclusion. The text should be consistent.

RESPONSE: The Phase II RI report utilizes a large site-specific database on the local hydrogeology. This information includes geologic logs, slug- and pumping-test data, water quality analyses, and static water level measurements. The data are collected in many wells throughout the Monsanto Plant. From these data, we have determined that the groundwater flow system is "separated" into several regions.

The UBZ-1 region is found to the west of the Subsidiary Fault. There are strong upward hydraulic gradients in this area, and the shallow water quality is not affected by the old underflow solids area. Pumping tests show that the fault is a barrier boundary.

The UBZ-2 zone is bounded by the Monsanto Fault to the east and the Subsidiary fault to the west. Pump testing, water quality and water level data shows that both faults are barriers to flow.

The UBZ-3 zone is defined to separate potential effects emanating from Kerr McGee from those of Monsanto. The lateral boundaries for this zone are based upon groundwater flow lines potentially emanating from the Kerr McGee facility. The Monsanto Fault defines the western boundary of this zone.

The UBZ-4 zone is defined as that area contributing flow to the production wells operated by Monsanto. The Monsanto Fault is a no-flow boundary to the west of the zone.

The UBZ-5 zone is that area contributing flow to Ledger Springs.

There is sufficient data to make these conclusions and request more specific information to identify the inadequacy of the available data.

5. Page 115, Section 4.6.1.2, Paragraph 3
Comment references EPA Comment 30

COMMENT: Comment response does not fully satisfy the EPA comment. Beryllium was detected in groundwater at concentrations above the upper tolerance level (Page 114, Table 4-21). Beryllium was eliminated because it was detected sporadically prior to 1992 and has not been detected since 1992. A longer time interval without beryllium detection appears necessary for this rationale to be acceptable

RESPONSE: Beryllium was proposed to be deleted following non-detection in all sampling locations in November 1992. This was documented in a letter dated April 29, 1993 sent to Monsanto, EPA and SAIC. Beryllium has not been analyzed since that time. Monsanto does not plan to analyze beryllium in groundwater in subsequent sampling rounds.

6. Page 116, Section 4.6.1.3, Paragraph 3
Comment references EPA Comment 31

COMMENT: Comment response does not satisfy the EPA comment, which still must be addressed. CERCLA and NCP require that potential as well as actual drinking water sources be addressed. The rationale for considering only those constituents of interest from the UBZ-2 groundwater region does not appear sufficiently conservative. The exposure potential for site constituents detected in other groundwater regions is not sufficiently known to support the rationale, given the complexity of the site hydrogeology. The RI must acknowledge and address all constituents of concern in all groundwater zones, including those beneath the site.

RESPONSE: The Phase II RI does address all groundwater zones, including those beneath the Monsanto Plant. Table 4-21 presents a listing of elevated constituents by groundwater region. Table 4-22 presents a listing of constituents of potential interest, also according to groundwater region. These analyses are comprehensive to the Monsanto Plant area. In response to the EPA comment, on page 116 of the Phase II RI we shall delete paragraph 3 and the related list of constituents that follows this paragraph.

7. Page 118 and 123, Section 4.6.2, Paragraphs 1 and 5 (Page 118) and 5 (Page 123)
Comment references EPA Comment 32

COMMENT: The comment response states that an explanation for the observed water quality trends is not available. The RI offers the pulse-type source explanation as a possible scenario. Since no data exists to support the pulse-type source scenario, the discussion of that scenario should be deleted from the RI.

RESPONSE: The observed water quality data support a pulse-type source explanation, however, we will delete it from the text per the request of EPA.

SCHEDULE FOR SUBMISSION OF THE RI REPORT

We propose to modify the RI report to incorporate the responses to comments (rather than to submit revised pages) and to incorporate as an appendix, the evaluation of Soda Creek sediment. We have not received EPA's comments on this report yet. We propose to submit the RI report within 30 days of final agreement on the contents of the Sediment report.

If you have any questions, please contact either David Banton or Bob Geddes.

Sincerely

Golder Associates Inc.

A handwritten signature in cursive script, appearing to read "David Banton".

David Banton
Principal

c.c W. Wright, Montgomery Watson
 D. Wilson, Monsanto
 M. Cunnane, Golder
 C. Hunter, Golder